

ATTORNEY
JUL 7

SEQUENCE LISTING



<110> TSUCHIYA, MASAYUKI

<120> NATURAL HUMANIZED ANTIBODY

<130> 053466/0274

<140> 09/509,098

<141> 2000-03-22

<150> PCT/JP98/04469

<151> 1998-10-02

<150> JP 9-271726

<151> 1997-10-03

<160> 203

<170> PatentIn Ver. 2.1

<210> 1

<211> 394

<212> DNA

<213> Murine sp.

<220>

<221> sig_peptide

<222> (1)..(72)

<220>

<221> mat_peptide

<222> (73)..(393)

<220>

<221> CDS

<222> (1)..(393)

<220>

<223> Description of Artificial Sequence: cDNA coding
for L chain V region of anti-HM1.24 antibody

<400> 1

atg ggc ttc aag atg gag tca cat ttt ctg gtc ttt gta ttc gtg ttt	48
Met Gly Phe Lys Met Glu Ser His Phe Leu Val Phe Val Phe Val Phe	
-20 -15 -10	

ctc tgg ttg tct ggt gtt gac gga gac att gtg atg acc cag tct cac	96
Leu Trp Leu Ser Gly Val Asp Gly Asp Ile Val Met Thr Gln Ser His	
-5 -1 1 5	

aaa ttc atg tcc aca tca gta gga gac agg gtc agc atc acc tgc aag	144
Lys Phe Met Ser Thr Ser Val Gly Asp Arg Val Ser Ile Thr Cys Lys	
10 15 20	

gcc agt cag gat gtg aat act gct gta gcc tgg tat caa caa aaa cca	192
Ala Ser Gln Asp Val Asn Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro	
25 30 35 40	

Bf

gga caa tcg cct aaa cta ctg att tac tcg gca tcc aac cgg tac act 240
 Gly Gln Ser Pro Lys Leu Leu Ile Tyr Ser Ala Ser Asn Arg Tyr Thr
 45 50 55

 gga gtc cct gat cgc atc act ggc agt gga tct ggg acg gat ttc act 288
 Gly Val Pro Asp Arg Ile Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr
 60 65 70

 ttc acc atc agc agt gtg cag gcg gaa gac ctg gca ctt tat tac tgt 336
 Phe Thr Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Leu Tyr Tyr Cys
 75 80 85

 cag caa cat tat agt act cca ttc acg ttc ggc tcg ggg aca aag ttg 384
 Gln Gln His Tyr Ser Thr Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu
 90 95 100

 gaa ata aaa c 394
 Glu Ile Lys
 105

<210> 2
 <211> 131
 <212> PRT
 <213> Murine sp.

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of L chain V region of mouse anti-HM1.24
 antibody

<400> 2
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 -20 -15 -10

 Leu Trp Leu Ser Gly Val Asp Gly Asp Ile Val Met Thr Gln Ser His
 -5 -1 1 5

 Lys Phe Met Ser Thr Ser Val Gly Asp Arg Val Ser Ile Thr Cys Lys
 10 15 20

 Ala Ser Gln Asp Val Asn Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro
 25 30 35 40

 Gly Gln Ser Pro Lys Leu Leu Ile Tyr Ser Ala Ser Asn Arg Tyr Thr
 45 50 55

 Gly Val Pro Asp Arg Ile Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr
 60 65 70

 Phe Thr Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Leu Tyr Tyr Cys
 75 80 85

 Gln Gln His Tyr Ser Thr Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu
 90 95 100

Glu Ile Lys
105

<210> 3
<211> 418
<212> DNA
<213> Murine sp.

<220>
<221> sig_peptide
<222> (1)..(57)

<220>
<221> mat_peptide
<222> (58)..(417)

<220>
<221> CDS
<222> (1)..(417)

<220>
<223> Description of Artificial Sequence: cDNA coding
for H chain V region of mouse anti-HM1.24
antibody

<400> 3
atg gaa tgt aac tgg ata ctt cct ttt att ctg tca gta act tca ggt 48
Met Glu Cys Asn Trp Ile Leu Pro Phe Ile Leu Ser Val Thr Ser Gly
-15 -10 -5

gcc tac tca cag gtt caa ctc cag cag tct ggg gct gag ctg gca aga 96
Ala Tyr Ser Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg
-1 1 5 10

cct ggg gct tca gtg aag ttg tcc tgc aag gct tct ggc tac acc ttt 144
Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe
15 20 25

act ccc tac tgg atg cag tgg gta aaa cag agg cct gga cag ggt ctg 192
Thr Pro Tyr Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu
30 35 40 45

gaa tgg att ggg tct att ttt cct gga gat ggt gat act agg tac agt 240
Glu Trp Ile Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
50 55 60

cag aag ttc aag ggc aag gcc aca ttg act gca gat aaa tcc tcc agt 288
Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser
65 70 75

aca gcc tac atg caa ctc agc atc ttg gca ttt gag gac tct gcg gtc 336
Thr Ala Tyr Met Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val
80 85 90

tat tac tgt gca aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
95 100 105

tgg ggc caa ggc acc act ctc aca gtc tcc tca g
 Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser
 110 115 120

418

<210> 4
 <211> 139
 <212> PRT
 <213> Murine sp.

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of H chain V region of mouse anti-
 HM1.24 antibody

<400> 4
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 -15 -10 -5
 Ala Tyr Ser Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Ile Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser
 65 70 75
 Thr Ala Tyr Met Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser
 110 115 120

<210> 5
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: CDR (1) of L
 chain V region of anti-HM1.24 antibody

<400> 5
 Lys Ala Ser Gln Asp Val Asn Thr Ala Val Ala
 1 5 10

<210> 6
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: CDR (2) of L
 chain V region of anti-HM1.24 antibody

<400> 6
 Ser Ala Ser Asn Arg Tyr Thr
 1 5

<210> 7
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: CDR (3) of L
 chain V region of anti-HM1.24 antibody

<400> 7
 Gln Gln His Tyr Ser Thr Pro Phe Thr
 1 5

<210> 8
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: CDR (1) of H
 chain V region of anti-HM1.24 antibody

<400> 8
 Pro Tyr Trp Met Gln
 1 5

<210> 9
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: CDR (2) of H
 chain V region of anti-HM1.24 antibody

<400> 9
 Ser Ile Phe Gly Asp Gly Asp Thr Arg Tyr Ser Gln Lys Phe Lys Gly
 1 5 10 15

<210> 10
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: CDR (3) of H
 chain V region of anti-HM1.24 antibody

<400> 10
 Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 1 5 10

<210> 11
 <211> 379
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA coding for
 humanized L chain V region of anti-HM1.24
 antibody

<220>
 <221> sig_peptide
 <222> (1)..(57)

<220>
 <221> mat_peptide
 <222> (58)..(378)

<220>
 <221> CDS
 <222> (1)..(378)

<400> 11
 atg gga tgg agc tgt atc atc ctc tcc ttg gta gca aca gct aca ggt 48
 Met Gly Trp Ser Cys Ile Ile Leu Ser Leu Val Ala Thr Ala Thr Gly
 -15 -10 -5

gtc cac tcc gac atc cag atg acc cag agc cca agc agc ctg agc gcc 96
 Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
 -1 1 5 10

agc gtg ggt gac aga gtg acc atc acc tgt aag gct agt cag gat gtg 144
 Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Val
 15 20 25

aat act gct gta gcc tgg tac cag cag aag cca gga aag gct cca aag 192
 Asn Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
 30 35 40 45

ctg ctg atc tac tcg gca tcc aac cgg tac act ggt gtg cca agc aga 240
 Leu Leu Ile Tyr Ser Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg
 50 55 60

ttc agc ggt agc ggt agc ggt acc gac ttc acc ttc acc atc agc agc 288
 Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
 65 70 75

ctc cag cca gag gac atc gct acc tac tac tgc cag caa cat tat agt 336
 Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln His Tyr Ser
 80 85 90

act cca ttc acg ttc ggc caa ggg acc aag gtg gaa atc aaa c 379
 Thr Pro Phe Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 95 100 105

<210> 12
 <211> 126
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Humanized L chain V
 region of anti-HM1.24 antibody

<400> 12
 Met Gly Trp Ser Cys Ile Ile Leu Ser Leu Val Ala Thr Ala Thr Gly
 -15 -10 -5

Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
 -1 1 5 10

Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Val
 15 20 25

Asn Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
 30 35 40 45

Leu Leu Ile Tyr Ser Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg
 50 55 60

Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
 65 70 75

Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln His Tyr Ser
 80 85 90

Thr Pro Phe Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 95 100 105

<210> 13
 <211> 379
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA coding for
 humanized L chain V region of anti-HM1.24
 antibody

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<220>
 <221> sig_peptide
 <222> (1)..(57)

<220>
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<220>
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 <222> (1)..(378)

<400> 13
 atg gga tgg agc tgt atc atc ctc tcc ttg gta gca aca gct aca ggt 48
 Met Gly Trp Ser Cys Ile Ile Leu Ser Leu Val Ala Thr Ala Thr Gly
 -15 -10 -5

gtc cac tcc gac atc cag atg acc cag agc cca agc agc ctg agc gcc 96
 Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
 -1 1 5 10

agc gtg ggt gac aga gtg acc atc acc tgt aag gct agt cag gat gtg 144
 Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Val
 15 20 25

aat act gct gta gcc tgg tac cag cag aag cca gga aag gct cca aag 192
 Asn Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
 30 35 40 45

ctg ctg atc tac tcg gca tcc aac cgg tac act ggt gtg cca agc aga 240
 Leu Leu Ile Tyr Ser Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg
 50 55 60

ttc agc ggt agc ggt agt ggt acc gac tac acc ttc acc atc agc agc 288
 Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser Ser
 65 70 75

ctc cag cca gag gac atc gct acc tac tac tgc cag caa cat tat agt 336
 Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln His Tyr Ser
 80 85 90

act cca ttc acg ttc ggc caa ggg acc aag gtg gaa atc aaa c 379
 Thr Pro Phe Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 95 100 105

<210> 14
 <211> 126
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Humanized L chain V
 region of anti-HM1.24 antibody

<400> 14

Met Gly Trp Ser Cys Ile Ile Leu Ser Leu Val Ala Thr Ala Thr Gly
 -15 -10 -5

Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
 -1 1 5 10

Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Val
 15 20 25

Asn Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
 30 35 40 45

Leu Leu Ile Tyr Ser Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg
 50 55 60

Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser Ser
 65 70 75

Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln His Tyr Ser
 80 85 90

Thr Pro Phe Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 95 100 105

<210> 15

<211> 418

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA coding for
 humanized H chain V region (version a) of anti-
 HM1.24 antibody

<220>

<221> sig_peptide

<222> (1)..(57)

<220>

<221> mat_peptide

<222> (58)..(417)

<220>

<221> CDS

<222> (1)..(417)

<400> 15

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 -15 -10 -5

gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

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cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
    15                20                25

act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
    30                35                40                45

gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
                50                55                60

cag aag ttc aag ggc aga gtc acc atg acc gca gac acg tcc acg agc 288
Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser
                65                70                75

aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
                80                85                90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
    95                100                105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110                115                120

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<210> 16
 <211> 139
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Humanized H chain V
 region (version a) of anti-HM1.24 antibody

<400> 16
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser
 65 70 75

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<210> 17
<211> 418
<212> DNA
<213> Artificial Sequence
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<220>
<223> Description of Artificial Sequence: DNA coding for humanized H chain V region (version b) of anti-HM1.24 antibody

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<220>
<221> sig_peptide
<222> (1)..(57)
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<220>
<221> mat_peptide
<222> (58)..(417)
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<220>  
<221> CDS  
<222> (1) .. (417)
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<400> 17																	
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Met	Asp	Trp	Thr	Trp	Arg	Val	Phe	Phe	Leu	Leu	Ala	Val	Ala	Pro	Gly		
				-15					-10					-5			
gct	cac	tcc	cag	gtg	cag	ctg	gtg	cag	tct	ggg	gct	gag	gtg	aag	aag		96
Ala	His	Ser	Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys		
		-1	1				5					10					
cct	ggg	gcc	tca	gtg	aag	gtt	tcc	tgc	aag	gca	tct	gga	tac	acc	ttc		144
Pro	Gly	Ala	Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe		
	15					20					25						
act	ccc	tac	tgg	atg	cag	tgg	gtg	cga	cag	gcc	cct	gga	caa	ggg	ctt		192
Thr	Pro	Tyr	Trp	Met	Gln	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Gly	Leu		
30					35					40					45		
gag	tgg	atg	gga	tct	att	ttt	cct	gga	gat	ggc	gat	act	agg	tac	agt		240
Glu	Trp	Met	Gly	Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser		
				50					55					60			
cag	aag	ttc	aag	ggc	aaa	gtc	acc	atg	acc	gca	gac	acg	tcc	acg	agc		288
Gln	Lys	Phe	Lys	Gly	Lys	Val	Thr	Met	Thr	Ala	Asp	Thr	Ser	Thr	Ser		
			65					70					75				

aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 18

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Humanized H chain V
 region (version b) of anti-HM1.24 antibody

<400> 18

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Thr Ser
 65 70 75

Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 19

<211> 418

<212> DNA

<213> Artificial Sequence

38

<220>

<223> Description of Artificial Sequence: DNA coding for
humanized H chain V region (version c) of anti-
HM1.24 antibody

<220>

<221> sig_peptide

<222> (1)..(57)

<220>

<221> mat_peptide

<222> (58)..(417)

<220>

<221> CDS

<222> (1)..(417)

<400> 19

atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt	48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly	
-15 -10 -5	
gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag	96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys	
-1 1 5 10	
cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc	144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe	
15 20 25	
act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt	192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu	
30 35 40 45	
gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt	240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser	
50 55 60	
cag aag ttc aag ggc aga gtc act atg acc gca gac aag tcc acg agc	288
Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Lys Ser Thr Ser	
65 70 75	
aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg	336
Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val	
80 85 90	
tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac	384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr	
95 100 105	
tgg ggg caa ggg acc acg gtc acc gtc tcc tca g	418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser	
110 115 120	

<210> 20

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: H chain V region
(version c) of anti-HM1.24 antibody

<400> 20

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Met Asp Trp  Trp  Arg  Val  Phe  Phe  Leu  Leu  Ala  Val  Ala  Pro  Gly
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Ala  His  Ser  Gln  Val  Gln  Leu  Val  Gln  Ser  Gly  Ala  Glu  Val  Lys  Lys
              -1   1                5                10

Pro  Gly  Ala  Ser  Val  Lys  Val  Ser  Cys  Lys  Ala  Ser  Gly  Tyr  Thr  Phe
              15                20                25

Thr  Pro  Tyr  Trp  Met  Gln  Trp  Val  Arg  Gln  Ala  Pro  Gly  Gln  Gly  Leu
              30                35                40                45

Glu  Trp  Met  Gly  Ser  Ile  Phe  Pro  Gly  Asp  Gly  Asp  Thr  Arg  Tyr  Ser
              50                55                60

Gln  Lys  Phe  Lys  Gly  Arg  Val  Thr  Met  Thr  Ala  Asp  Lys  Ser  Thr  Ser
              65                70                75

Thr  Val  Tyr  Met  Glu  Leu  Ser  Ser  Leu  Arg  Ser  Glu  Asp  Thr  Ala  Val
              80                85                90

Tyr  Tyr  Cys  Ala  Arg  Gly  Leu  Arg  Arg  Gly  Gly  Tyr  Tyr  Phe  Asp  Tyr
              95                100               105

Trp  Gly  Gln  Gly  Thr  Thr  Val  Thr  Val  Ser  Ser
110                115                120

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<210> 21

<211> 418

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA coding for
humanized H chain V region (version d) of anti-
HM1.24 antibody

<220>

<221> sig_peptide

<222> (1)..(57)

<220>

<221> mat_peptide

<222> (58)..(417)

<220>

<221> CDS

<222> (1)..(417)

<400> 21
 atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

cag aag ttc aag ggc aaa gtc acc atg acc gca gac aag tcc acg agc 288
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Lys Ser Thr Ser
 65 70 75

aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 22

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: H chain V region
 (version d) of anti-HM1.24 antibody

<400> 22

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Lys Ser Thr Ser
 65 70 75
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 23
 <211> 418
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA coding for
 humanized H chain V region (version e) of anti-
 HM1.24 antibody

<220>
 <221> sig_peptide
 <222> (1)..(57)

<220>
 <221> mat_peptide
 <222> (58)..(417)

<220>
 <221> CDS
 <222> (1)..(417)

<400> 23
 atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

cag aag ttc aag ggc aga gcc acc ctg acc gca gac acg tcc acg agc 288
 Gln Lys Phe Lys Gly Arg Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser
 65 70 75

aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 24

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: H chain V region
 (version e) of anti-HM1.24 antibody

<400> 24

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

Gln Lys Phe Lys Gly Arg Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser
 65 70 75

Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

B8

<210> 25
 <211> 418
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA coding for
 humanized H chain V region (version f) of anti-
 HM1.24 antibody

<220>
 <221> sig_peptide
 <222> (1)..(57)

<220>
 <221> mat_peptide
 <222> (58)..(417)

<220>
 <221> CDS
 <222> (1)..(417)

<400> 25
 atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

cag aag ttc aag ggc aga gcc acc ctg act gca gac acg tcc tcg agc 288
 Gln Lys Phe Lys Gly Arg Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser
 65 70 75

aca gcc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

418

<210> 26
 <211> 139
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Humanizaed H chain V
 region (version f) of anti-HM1.24 antibody

<400> 26
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Arg Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 27
 <211> 418
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA coding for
 humanized H chain V region (version g) of anti-
 HM1.24 antibody

<220>
 <221> sig_peptide
 <222> (1)..(57)

08

<220>
 <221> mat_peptide
 <222> (58)..(417)

<220>
 <221> CDS
 <222> (1)..(417)

<400> 27
 atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

act ccc tac tgg atg cag tgg gtg cga cag cgc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Arg Pro Gly Gln Gly Leu
 30 35 40 45

gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

cag aag ttc aag ggc aga gtc acc atg acc gca gac acg tcc acg agc 288
 Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser
 65 70 75

aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 28
 <211> 139
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Humanized H chain V
 region (version g) of anti-HM1.24 antibody

<400> 28
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Arg Pro Gly Gln Gly Leu
 30 35 40 45

Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser
 65 70 75

Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 29
 <211> 418
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA coding for
 humanized H chain V region (version h) of anti-
 HM1.24 antibody

<220>
 <221> sig_peptide
 <222> (1)..(57)

<220>
 <221> mat_peptide
 <222> (58)..(417)

<220>
 <221> CDS
 <222> (1)..(417)

<400> 29
 atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc	144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe	
15 20 25	
act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt	192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu	
30 35 40 45	
gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt	240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser	
50 55 60	
cag aag ttc aag ggc aaa gtc acc atg acc gca gac acg tcc tcg agc	288
Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser	
65 70 75	
aca gcc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg	336
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val	
80 85 90	
tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac	384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr	
95 100 105	
tgg ggg caa ggg acc acg gtc acc gtc tcc tca g	418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser	
110 115 120	

<210> 30

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Humanized H chain V region (version h) of anti-HM1.24 antibody

<400> 30

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly	
-15 -10 -5	

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys	
-1 1 5 10	

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe	
15 20 25	

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu	
30 35 40 45	

Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser	
50 55 60	

Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser	
65 70 75	

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110 115 120

<220>
<223> Description of Artificial Sequence: DNA coding for humanized H chain V region (version i) of anti-HM1.24 antibody

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<220>
<221> mat_peptide
<222> (58)..(417)
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<220>  
<221> CDS  
<222> (1) .. (417)
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<400> 31
atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt    48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
          -15                -10                -5

```

gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag . 96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 5 10

cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
15 20 25

act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
30 35 40 45

gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
50 55 60

cag aag ttc aag ggc aaa gtc acc atg acc gca gac acg tcc tcg agc 288
Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
65 70 75



aca gcc tac atg gag ctg agc agc ctg gca ttt gag gac acg gcc gtg 336
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Ala Phe Glu Asp Thr Ala Val
 80 85 90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 32

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Humanized H chain V
 region (version i) of anti-HM1.24 antibody

<400> 32

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75

Thr Ala Tyr Met Glu Leu Ser Ser Leu Ala Phe Glu Asp Thr Ala Val
 80 85 90

Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 33

<211> 418

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA coding for
humanized H chain V region (version j) of anti-
HM1.24 antibody

<220>

<221> sig_peptide

<222> (1)..(57)

<220>

<221> mat_peptide

<222> (58)..(417)

<220>

<221> CDS

<222> (1)..(417)

<400> 33

atg	gac	tgg	acc	tgg	agg	gtc	ttc	ttc	ttg	ctg	gct	gta	gct	cca	ggt	48
Met	Asp	Trp	Thr	Trp	Arg	Val	Phe	Phe	Leu	Leu	Ala	Val	Ala	Pro	Gly	
				-15					-10					-5		

gct	cac	tcc	cag	gtg	cag	ctg	gtg	cag	tct	ggg	gct	gag	gtg	aag	aag	96
Ala	His	Ser	Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys	
	-1	1				5						10				

cct	ggg	gcc	tca	gtg	aag	gtt	tcc	tgc	aag	gca	tct	gga	tac	acc	ttc	144
Pro	Gly	Ala	Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe	
	15					20					25					

act	ccc	tac	tgg	atg	cag	tgg	gtg	cga	cag	gcc	cct	gga	caa	ggg	ctt	192
Thr	Pro	Tyr	Trp	Met	Gln	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Gly	Leu	
	30				35				40					45		

gag	tgg	atg	gga	tct	att	ttt	cct	gga	gat	ggt	gat	act	agg	tac	agt	240
Glu	Trp	Met	Gly	Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser	
			50					55					60			

cag	aag	ttc	aag	ggc	aaa	gcc	acc	ctg	act	gca	gac	acg	tcc	tcg	agc	288
Gln	Lys	Phe	Lys	Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Thr	Ser	Ser	Ser	
		65						70					75			

aca	gcc	tac	atg	gag	ctg	agc	agc	ctg	aga	tct	gag	gac	acg	gcc	gtg	336
Thr	Ala	Tyr	Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Glu	Asp	Thr	Ala	Val	
		80					85					90				

tat	tac	tgt	gcg	aga	gga	tta	cga	cga	ggg	ggg	tac	tac	ttt	gac	tac	384
Tyr	Tyr	Cys	Ala	Arg	Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr	
	95				100						105					

tgg	ggg	caa	ggg	acc	acg	gtc	acc	gtc	tcc	tca	g					418
Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser						
110				115					120							

<210> 34

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Humanized H chain V region (version j) of anti-HM1.24 antibody

<400> 34

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Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
          -15          -10          -5

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
      -1  1          5          10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
    15          20          25

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
    30          35          40          45

Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
          50          55          60

Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser
          65          70          75

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
      80          85          90

Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
    95          100          105

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110          115          120

```

<210> 35

<211> 418

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA coding for H chain V region (version k) of anti-HM1.24 antibody

<220>

<221> sig_peptide

<222> (1)..(57)

<220>

<221> mat_peptide

<222> (58)..(417)

<220>

<221> CDS

<222> (1)..(417)

<400> 35

atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

cag aag ttc aag ggc aaa gtc acc atg acc gca gac acg tcc tcg agc 288
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75

aca gcc tac atg cag ctg agc agc cta aga tct gag gac acg gcc gtg 336
 Thr Ala Tyr Met Gln Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 36

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Humanized H chain V
 region (version k) of anti-HM1.24 antibody

<400> 36

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 Thr Ala Tyr Met Gln Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 37
 <211> 418
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA coding for
 humanized H chain V region (version 1) of anti-
 HM1.24 antibody

<220>
 <221> sig_peptide
 <222> (1)..(57)

<220>
 <221> mat_peptide
 <222> (58)..(417)

<220>
 <221> CDS
 <222> (1)..(417)

<400> 37
 atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

cag aag ttc aag ggc aaa gtc acc atg acc gca gac acg tcc tcg agc 288
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75

aca gcc tac atg cag ctg agc atc ctg aga tct gag gac acg gcc gtg 336
 Thr Ala Tyr Met Gln Leu Ser Ile Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Val Thr Val Ser Ser
 110 115 120

<210> 38

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Humanized H chain V
 region (version 1) of anti-HM1.24 antibody

<400> 38

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75

Thr Ala Tyr Met Gln Leu Ser Ile Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 39
 <211> 418
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA coding for
 humanized H chain V region (version m) of anti-
 HM1.24 antibody

<220>
 <221> sig_peptide
 <222> (1)..(57)

<220>
 <221> mat_peptide
 <222> (58)..(417)

<220>
 <221> CDS
 <222> (1)..(417)

<400> 39
 atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

cag aag ttc aag ggc aaa gtc acc atg acc gca gac acg tcc tcg agc 288
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75

aca gcc tac atg cag ctg agc atc ctg aga tct gag gac tcg gcc gtg 336
 Thr Ala Tyr Met Gln Leu Ser Ile Leu Arg Ser Glu Asp Ser Ala Val
 80 85 90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

418

<210> 40
 <211> 139
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Humanized H chain V
 region (version m) of anti-HM1.24 antibody

<400> 40
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75
 Thr Ala Tyr Met Gln Leu Ser Ile Leu Arg Ser Glu Asp Ser Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 41
 <211> 418
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA coding for
 humanized H chain V region (version n) of anti-
 HM1.24 antibody

<220>
 <221> sig_peptide
 <222> (1)..(57)

```
<220>
<221> mat_peptide
<222> (58)..(417)
```

```
<220>  
<221> CDS  
<222> (1)..(417)
```

<400> 41																	
atg	gac	tgg	acc	tgg	agg	gtc	ttc	ttc	ttg	ctg	gct	gta	gct	cca	ggg	48	
Met	Asp	Trp	Thr	Trp	Arg	Val	Phe	Phe	Leu	Leu	Ala	Val	Ala	Pro	Gly		
				-15					-10					-5			
gct	cac	tcc	cag	gtg	cag	ctg	gtg	cag	tct	ggg	gct	gag	gtg	aag	aag	96	
Ala	His	Ser	Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys		
				-1	1					5					10		
cct	ggg	gcc	tca	gtg	aag	gtt	tcc	tgc	aag	gca	tct	gga	tac	acc	ttc	144	
Pro	Gly	Ala	Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe		
				15					20					25			
act	ccc	tac	tgg	atg	cag	tgg	gtg	cga	cag	gcc	cct	gga	caa	ggg	ctt	192	
Thr	Pro	Tyr	Trp	Met	Gln	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Gly	Leu		
				30					35					40			
gag	tgg	atg	gga	tct	att	ttt	cct	gga	gat	ggg	gat	act	agg	tac	agt	240	
Glu	Trp	Met	Gly	Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser		
				50					55					60			
cag	aag	ttc	aag	ggc	aaa	gtc	acc	atg	acc	gca	gac	acg	tcc	tcg	agc	288	
Gln	Lys	Phe	Lys	Gly	Lys	Val	Thr	Met	Thr	Ala	Asp	Thr	Ser	Ser	Ser		
				65					70					75			
aca	gcc	tac	atg	gag	ctg	agc	atc	ctg	aga	tct	gag	gac	acg	gcc	gtg	336	
Thr	Ala	Tyr	Met	Glu	Leu	Ser	Ile	Leu	Arg	Ser	Glu	Asp	Thr	Ala	Val		
				80					85					90			
tat	tac	tgt	gcg	aga	gga	tta	cga	cga	ggg	ggg	tac	tac	ttt	gac	tac	384	
Tyr	Tyr	Cys	Ala	Arg	Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr		
				95					100					105			
tgg	ggg	caa	ggg	acc	acg	gtc	acc	gtc	tcc	tca	g					418	
Trp	Gly	Gln	Gly	Thr	Val	Val	Thr	Val	Ser	Ser							
				110					115					120			

```
<210> 42
<211> 139
<212> PRT
<213> Artificial Sequence
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<220>
<223> Description of Artificial Sequence: Humanized H chain V region (version n) of anti-HM1.24 antibody

```
<400> 42
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
          -15          -10          -5
```


Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
 65 70 75

Thr Ala Tyr Met Glu Leu Ser Ile Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 43
 <211> 418
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: DNA coding for
 humanized H chain V region (version o) of anti-
 HM1.24 antibody

<220>
 <221> sig_peptide
 <222> (1)..(57)

<220>
 <221> mat_peptide
 <222> (58)..(417)

<220>
 <221> CDS
 <222> (1)..(417)

<400> 43
 atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
 Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

```

cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
   15                20                25

act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
   30                35                40                45

gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
                50                55                60

cag aag ttc aag ggc aaa gtc acc atg acc gca gac acg tcc tcg agc 288
Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
                65                70                75

aca gcc tac atg gag ctg agc agc ctg aga tct gag gac tcg gcc gta 336
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Ser Ala Val
                80                85                90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
   95                100                105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110                115                120

```

<210> 44

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Humanized H chain V region (version o) of anti-HM1.24 antibody

<400> 44

```

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
                -15                -10                -5

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
   -1   1                5                10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
   15                20                25

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
   30                35                40                45

Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
                50                55                60

Gln Lys Phe Lys Gly Lys Val Thr Met Thr Ala Asp Thr Ser Ser Ser
                65                70                75

```

Thr	Ala	Tyr	Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Glu	Asp	Ser	Ala	Val
		80					85					90			
Tyr	Tyr	Cys	Ala	Arg	Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr
	95					100					105				
Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser					
110					115					120					

```
<210> 45
<211> 418
<212> DNA
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: DNA coding for humanized H chain V region (version p) of anti-HM1.24 antibody

```
<220>
<221> sig_peptide
<222> (1)..(57)
```

```
<220>
<221> mat_peptide
<222> (58)..(417)
```

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<220>  
<221> CDS  
<222> (1) .. (417)
```

<400> 45																
atg	gac	tgg	acc	tgg	agg	gtc	ttc	ttc	ttg	ctg	gct	gta	gct	cca	ggc	48
Met	Asp	Trp	Thr	Trp	Arg	Val	Phe	Phe	Leu	Leu	Ala	Val	Ala	Pro	Gly	
				-15					-10					-5		
gct	cac	tcc	cag	gtg	cag	ctg	gtg	cag	tct	ggg	gct	gag	gtg	aag	aag	96
Ala	His	Ser	Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys	
		-1	1				5					10				
cct	ggg	gcc	tca	gtg	aag	gtt	tcc	tgc	aag	gca	tct	gga	tac	acc	ttc	144
Pro	Gly	Ala	Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe	
	15					20					25					
act	ccc	tac	tgg	atg	cag	tgg	gtg	cga	cag	gcc	cct	gga	caa	ggg	ctt	192
Thr	Pro	Tyr	Trp	Met	Gln	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Gly	Leu	
30					35					40					45	
gag	tgg	atg	gga	tct	att	ttt	cct	gga	gat	ggc	gat	act	agg	tac	agt	240
Glu	Trp	Met	Gly	Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser	
				50					55					60		
cag	aag	ttc	aag	ggc	aga	gtc	acc	atg	acc	gca	gac	acg	tcc	acg	agc	288
Gln	Lys	Phe	Lys	Gly	Arg	Val	Thr	Met	Thr	Ala	Asp	Thr	Ser	Thr	Ser	
			65				70						75			

aca gcc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 46

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Humanized H chain V
 region (version p) of anti-HM1.24 antibody

<400> 46

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser
 65 70 75

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 47

<211> 418

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA coding for
humanized H chain V region (version p) of anti-
HM1.24 antibody

<220>

<221> sig_peptide

<222> (1)..(57)

<220>

<221> mat_peptide

<222> (58)..(417)

<220>

<221> CDS

<222> (1)..(417)

<400> 47

atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt	48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly	
-15 -10 -5	
gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag	96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys	
-1 1 5 10	
cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc	144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe	
15 20 25	
act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt	192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu	
30 35 40 45	
gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt	240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser	
50 55 60	
cag aag ttc aag ggc aga gtc acc atg acc gca gac acg tcc tcg agc	288
Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Ser Ser	
65 70 75	
aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg	336
Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val	
80 85 90	
tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac	384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr	
95 100 105	
tgg ggg caa ggg acc acg gtc acc gtc tcc tca g	418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser	
110 115 120	

<210> 48

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Humanizaed H chain V region (version p) of anti-HM1.24 antibody

<400> 48

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Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
          -15                -10                -5

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
      -1  1                5                10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
    15                20                25

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
    30                35                40                45

Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
          50                55                60

Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Ser Ser
          65                70                75

Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
      80                85                90

Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
      95                100                105

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110                115                120

```

<210> 49

<211> 418

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA coding for humanized H chain V region (version r) of anti-HM1.24 antibody

<220>

<221> sig_peptide

<222> (1)..(57)

<220>

<221> mat_peptide

<222> (58)..(417)

<220>

<221> CDS

<222> (1)..(417)

<211> 139

<213> Artificial Sequence

<223> Description of Artificial Sequence: Humanized H chain V region (version r) of anti-HM1.24 antibody

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
-15 -10 -5

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
15 20 25

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Lys Ser Thr Ser
 65 70 75
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 51
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 51
 actagtcgac atgaagttgc ctgcttaggct gttggtgctg 40

<210> 52
 <211> 39
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 52
 actagtcgac atggagwcag acacactcct gytatgggt 39

<210> 53
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 53
 actagtcgac atgagtgtgc tcactcaggt cctggsgett 40

<210> 54
 <211> 43

<212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 54
 actagtcgac atgaggrccc ctgctcagwt tyttggmwtc ttg 43

<210> 55
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 55
 actagtcgac atggatttwc aggtgcagat twtcagcttc 40

<210> 56
 <211> 37
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 56
 actagtcgac atgaggtkcy ytgytsagyt yctgrgg 37

<210> 57
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 57
 actagtcgac atgggcwtca agatggagtc acakwyycwg g 41

<210> 58
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 58
 actagtcgac atgtggggay ctktttycmm tttttcaatt g 41

<210> 59
 <211> 35
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

 <400> 59
 actagtcgac atggtrtccw casctcagtt ccttg 35

<210> 60
 <211> 37
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

 <400> 60
 actagtcgac atgtatatat gtttggtgtc tatttct 37

<210> 61
 <211> 38
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

 <400> 61
 actagtcgac atggaagccc cagctcagct tctcttcc 38

<210> 62
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

 <400> 62
 ggatcccggg tggatggtgg gaagatg 27

<210> 63
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

 <400> 63
 tagagtcacc gaggagccag ttgta 25

<210> 64
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 64
ggatcccggg agtggataga ccgatg 26

<210> 65
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 65
gataagcttc caccatgggc ttcaagatgg agtc 34

<210> 66
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 66
gataagcttc caccatggaa tgtaactgga tact 34

<210> 67
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 67
ggcggatcca ctcacgtttt atttccaact ttgt 34

<210> 68
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 68
ggcggatcca ctcacctgag gagactgtga gagt 34

<210> 69
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 69
cagacagtgg ttcaaagt 18

<210> 70
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 70
gaattcggat ccactcacgt ttgatt 26

<210> 71
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 71
agtcaggatg tgaatactgc tgtagcctgg taccagcaga agccagga 48

<210> 72
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 72
gcatccaacc ggtacactgg tgtgccaaagc agattcagc 39

<210> 73
<211> 45
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 73

caacattata gtactccatt cacgttcggc caagggacca aggtg

45

<210> 74

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 74

gcagtattca catcctgact ggccttacag gtgatgggtca ctctgtc

47

<210> 75

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 75

acaccagtgt accggttgga tgccgagtag atcagcag

38

<210> 76

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 76

gtgaatggag tactataatg ttgctggcag tagtaggtag c

41

<210> 77

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 77

ggtaccgact acaccttcac catcagcagc c

31

<210> 78

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 78

ggtgaagggtg tagtcggtac cgctaccgct a

31

<210> 79

<211> 144

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 79

atgccttgca ggaaaccttc actgaggccc caggcttctt cacctcagcc ccagactgca 60
ccagctgcac ctgggagtga gcacctggag ctacagccag caagaagaag accctccagg 120
tccagtcacat ggtggaagct tatc 144

<210> 80

<211> 130

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 80

tcagtgaagg tttcctgcaa ggcattctgga tacaccttca ctccctactg gatgcagtgg 60
gtgcgacagg cccctggaca agggcttgag tggatgggat ctatttttcc tggagatggg 120
gatactaggt 130

<210> 81

<211> 131

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 81

aatacacggc cgtgtcctca gatctcaggc tgctcagctc catgtagaact gtgctcgtgg 60
acgtgtctgc ggtcatgggtg actctgccct tgaacttctg actgtaccta gtatcaccat 120
ctccaggaaa a 131

<210> 82

<211> 119

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 82
gagatctgag gacacggccg tgtattactg tgcgagagga ttacgacgag ggggggtacta 60
ctttgactac tgggggcaag ggaccacggt caccgtctcc tcaggtgagt ggatccgac 119

<210> 83
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 83
gataagcttc caccatggac tggac 25

<210> 84
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 84
gtcggatcca ctcacctgag gagac 25

<210> 85
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 85
aagttcaagg gcaaagtcac catgac 26

<210> 86
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 86
gtcatggtga ctttgccctt gaactt 26

<210> 87
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 87
atgaccgcag acaagtccac gagcac 26

<210> 88
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 88
gtgctcgtgg acttgtctgc ggtcat 26

<210> 89
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 89
aagttcaagg gcaaagtcac catgaccgca gacaagtcca cgagcac 47

<210> 90
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 90
gtgctcgtgg acttgtctgc ggtcatggtg actttgccct tgaactt 47

<210> 91
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 91
aagttcaagg gcagagccac cctgaccgca gacacgtc 38

<210> 92
<211> 38
<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 92

gacgtgtctg cggtcagggt ggctctgccc ttgaactt

38

<210> 93

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 93

cagacagtgg ttcaaagt

18

<210> 94

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 94

gccccaaagc caaggtc

17

<210> 95

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 95

atttttcctg gagatggtga tac

23

<210> 96

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 96

gtatcacat ctccaggaaa tat

23

<210> 97

<211> 418
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA coding for
 humanized H chain V region (native/version a mix)
 of anti-HM1.24 antibody

<220>

<221> sig_peptide

<222> (1)..(57)

<220>

<221> mat_peptide

<222> (58)..(417)

<220>

<221> CDS

<222> (1)..(417)

<400> 97

atg gaa tgt aac tgg ata ctt cct ttt att ctg tca gta act tca ggt	48
Met Glu Cys Asn Trp Ile Leu Pro Phe Ile Leu Ser Val Thr Ser Gly	
-15 -10 -5	
gcc tac tca cag gtt caa ctc cag cag tct ggg gct gag ctg gca aga	96
Ala Tyr Ser Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg	
-1 1 5 10	
cct ggg gct tca gtg aag ttg tcc tgc aag gct tct ggc tac acc ttt	144
Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe	
15 20 25	
act ccc tac tgg atg cag tgg gta aaa cag agg cct gga cag ggt ctg	192
Thr Pro Tyr Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu	
30 35 40 45	
gaa tgg att ggg tct att ttt cct gga gat ggt gat act agg tac agt	240
Glu Trp Ile Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser	
50 55 60	
cag aag ttc aag ggc aga gtc acc atg acc gca gac acg tcc acg agc	288
Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser	
65 70 75	
aca gtc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg	336
Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val	
80 85 90	
tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac	384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr	
95 100 105	
tgg ggg caa ggg acc acg gtc acc gtc tcc tca g	418
Trp Gly Gln Gly Thr Val Thr Val Ser Ser	
110 115 120	

<210> 98
 <211> 139
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Humanized H chain V region (native/version a mix) of anti-HM1.24 antibody

<400> 98

Met	Glu	Cys	Asn	Trp	Ile	Leu	Pro	Phe	Ile	Leu	Ser	Val	Thr	Ser	Gly			
				-15					-10					-5				
Ala	Tyr	Ser	Gln	Val	Gln	Leu	Gln	Gln	Ser	Gly	Ala	Glu	Leu	Ala	Arg			
		-1	1				5					10						
Pro	Gly	Ala	Ser	Val	Lys	Leu	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe			
	15					20					25							
Thr	Pro	Tyr	Trp	Met	Gln	Trp	Val	Lys	Gln	Arg	Pro	Gly	Gln	Gly	Leu			
	30				35					40					45			
Glu	Trp	Ile	Gly	Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser			
				50					55					60				
Gln	Lys	Phe	Lys	Gly	Arg	Val	Thr	Met	Thr	Ala	Asp	Thr	Ser	Thr	Ser			
			65					70					75					
Thr	Val	Tyr	Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Glu	Asp	Thr	Ala	Val			
		80					85					90						
Tyr	Tyr	Cys	Ala	Arg	Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr			
	95					100					105							
Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser								
110					115					120								

<210> 99
 <211> 418
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA coding for humanized C chain V region (native/version a mix) of anti-HM1.24 antibody

<220>

<221> sig_peptide
 <222> (1)..(57)

<220>

<221> mat_peptide
 <222> (58)..(417)

<220>

<221> CDS

<222> (1)..(417)

<400> 99

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atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt      48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
               -15                      -10                      -5

gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag      96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
               -1   1                      5                      10

cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc     144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
               15                      20                      25

act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt     192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
               30                      35                      40                      45

gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt     240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
               50                      55                      60

cag aag ttc aag ggc aag gcc aca ttg act gca gat aaa tcc tcc agt     288
Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser
               65                      70                      75

aca gcc tac atg caa ctc agc atc ttg gca ttt gag gac tct gcg gtc     336
Thr Ala Tyr Met Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val
               80                      85                      90

tat tac tgt gca aga gga tta cga cga ggg ggg tac tac ttt gac tac     384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
               95                      100                      105

tgg ggc caa ggc acc act ctc aca gtc tcc tca g                        418
Trp Gly Gln Gly Thr Leu Thr Val Ser Ser
110                      115                      120

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<210> 100

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Humanized C chain V region (native/version a mix) of anti-HM1.24 antibody

<400> 100

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Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
               -15                      -10                      -5

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
               -1   1                      5                      10

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Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25
 Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45
 Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60
 Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser
 65 70 75
 Thr Ala Tyr Met Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val
 80 85 90
 Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105
 Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser
 110 115 120

<210> 101
 <211> 38
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 101
 ctggttcggc ccacctctga aggttccaga atcgatag 38

<210> 102
 <211> 35
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 102
 gcagacacgt cctcgagcac agcctacatg gagct 35

<210> 103
 <211> 35
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 103
 agtccatgt aggtgtgtgt cgaggacgtg tctgc 35

<210> 104
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 104
tgggtgacgac agcgccctgg acaagg 26

<210> 105
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 105
ccttgtccag ggcgctgtcg caccca 26

<210> 106
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 106
tacatggagc tgagcagcct ggcatttgag gacacggccg t 41

<210> 107
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 107
acggccgtgt cctcaaatgc caggctgctc agtccatgt a 41

<210> 108
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 108

aagttcaagg gcaaagccac cctgac

26

<210> 109

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 109

gtcagggtgg ctttgccctt gaactt

26

<210> 110

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 110

gcctacatgc agctgagcag cct

23

<210> 111

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 111

aggctgctca gctgcatgta ggc

23

<210> 112

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 112

gcctacatgc agctgagcat cctgagatct gaggacac

38

<210> 113

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 113
gatctcagga tgctcagctg catgtaggct gtgct 35

<210> 114
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 114
gcctacatgc agctgagcat cctgagatct gaggactcgg ccgtgtatta 50

<210> 115
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 115
acggccgagt cctcagatct caggatgctc agctgcatgt aggctgtgct 50

<210> 116
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 116
gagctgagca tcctgagatc 20

<210> 117
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 117
gatctcagga tgctcagctc catgta 26

<210> 118
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 118
agatctgagg actcggccgt 20

<210> 119
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 119
acggccgagt cctcagatct 20

<210> 120
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 120
gcagacacgt ccacgagcac agcctacatg gagct 35

<210> 121
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 121
agctccatgt aggctgtgct cgtggacgtg tctgc 35

<210> 122
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 122
gcagacacgt cctcgagcac agtctacatg gagct 35

<210> 123
<211> 35
<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 123

agctccatgt agactgtgct cgaggacgtg tctgc

35

<210> 124

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 124

agagtcacca tcaccgcaga caagtc

26

<210> 125

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA Primer

<400> 125

gacttgtctg cggtgatggt gactct

26

<210> 126

<211> 418

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA coding for
humanized H chain V region (version s) of HM1.24
antibody

<220>

<221> sig_peptide

<222> (1)..(57)

<220>

<221> mat_peptide

<222> (58)..(417)

<220>

<221> CDS

<222> (1)..(417)

<400> 126

atg	gac	tgg	acc	tgg	agg	gtc	ttc	ttc	ttg	ctg	gct	gta	gct	cca	ggt	48
Met	Asp	Trp	Thr	Trp	Arg	Val	Phe	Phe	Leu	Leu	Ala	Val	Ala	Pro	Gly	
				-15					-10					-5		
gct	cac	tcc	cag	gtg	cag	ctg	gtg	cag	tct	ggg	gct	gag	gtg	aag	aag	96
Ala	His	Ser	Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys	
		-1	1				5					10				
cct	ggg	gcc	tca	gtg	aag	gtt	tcc	tgc	aag	gca	tct	gga	tac	acc	ttc	144
Pro	Gly	Ala	Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe	
	15					20					25					
act	ccc	tac	tgg	atg	cag	tgg	gtg	cga	cag	gcc	cct	gga	caa	ggg	ctt	192
Thr	Pro	Tyr	Trp	Met	Gln	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Gly	Leu	
	30				35					40					45	
gag	tgg	atg	gga	tct	att	ttt	cct	gga	gat	ggt	gat	act	agg	tac	agt	240
Glu	Trp	Met	Gly	Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser	
				50				55						60		
cag	aag	ttc	aag	ggc	aga	gtc	acc	atc	acc	gca	gac	aag	tcc	acg	agc	288
Gln	Lys	Phe	Lys	Gly	Arg	Val	Thr	Ile	Thr	Ala	Asp	Lys	Ser	Thr	Ser	
			65					70					75			
aca	gcc	tac	atg	gag	ctg	agc	agc	ctg	aga	tct	gag	gac	acg	gcc	gtg	336
Thr	Ala	Tyr	Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Glu	Asp	Thr	Ala	Val	
		80					85					90				
tat	tac	tgt	gcg	aga	gga	tta	cga	cga	ggg	ggg	tac	tac	ttt	gac	tac	384
Tyr	Tyr	Cys	Ala	Arg	Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr	
		95				100					105					
tgg	ggg	caa	ggg	acc	acg	gtc	acc	gtc	tcc	tca	g					418
Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser						
110					115				120							

<210> 127

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Humanized H chain V region (version s) of HM1.24 antibody

<400> 127

Met	Asp	Trp	Thr	Trp	Arg	Val	Phe	Phe	Leu	Leu	Ala	Val	Ala	Pro	Gly	
				-15					-10					-5		
Ala	His	Ser	Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys	
		-1	1				5					10				
Pro	Gly	Ala	Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe	
	15					20					25					

Thr	Pro	Tyr	Trp	Met	Gln	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Gly	Leu
30					35					40					45
Glu	Trp	Met	Gly	Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser
				50					55					60	
Gln	Lys	Phe	Lys	Gly	Arg	Val	Thr	Ile	Thr	Ala	Asp	Lys	Ser	Thr	Ser
			65					70					75		
Thr	Ala	Tyr	Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Glu	Asp	Thr	Ala	Val
		80					85					90			
Tyr	Tyr	Cys	Ala	Arg	Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr
	95					100					105				
Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser					
110					115					120					

<210> 128

<211> 1013

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (23)..(562)

<220>

<223> DNA coding for HM1.24 antigenic protein

<400> 128

gaattcggca	cgaggggatct	gg	atg	gca	tct	act	tcg	tat	gac	tat	tgc	aga	52			
			Met	Ala	Ser	Thr	Ser	Tyr	Asp	Tyr	Cys	Arg				
			1				5					10				
gtg	ccc	atg	gaa	gac	ggg	gat	aag	cgc	tgt	aag	ctt	ctg	ctg	ggg	ata	100
Val	Pro	Met	Glu	Asp	Gly	Asp	Lys	Arg	Cys	Lys	Leu	Leu	Leu	Gly	Ile	
			15					20				25				
gga	att	ctg	gtg	ctc	ctg	atc	atc	gtg	att	ctg	ggg	gtg	ccc	ttg	att	148
Gly	Ile	Leu	Val	Leu	Leu	Ile	Ile	Val	Ile	Leu	Gly	Val	Pro	Leu	Ile	
			30					35				40				
atc	ttc	acc	atc	aag	gcc	aac	agc	gag	gcc	tgc	cgg	gac	ggc	ctt	cgg	196
Ile	Phe	Thr	Ile	Lys	Ala	Asn	Ser	Glu	Ala	Cys	Arg	Asp	Gly	Leu	Arg	
		45					50					55				
gca	gtg	atg	gag	tgt	cgc	aat	gtc	acc	cat	ctc	ctg	caa	caa	gag	ctg	244
Ala	Val	Met	Glu	Cys	Arg	Asn	Val	Thr	His	Leu	Leu	Gln	Gln	Glu	Leu	
	60					65				70						
acc	gag	gcc	cag	aag	ggc	ttt	cag	gat	gtg	gag	gcc	cag	gcc	gcc	acc	292
Thr	Glu	Ala	Gln	Lys	Gly	Phe	Gln	Asp	Val	Glu	Ala	Gln	Ala	Ala	Thr	
	75				80					85					90	

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tgc aac cac act gtg atg gcc cta atg gct tcc ctg gat gca gag aag 340
Cys Asn His Thr Val Met Ala Leu Met Ala Ser Leu Asp Ala Glu Lys
          95                      100                      105

gcc caa gga caa aag aaa gtg gag gag ctt gag gga gag atc act aca 388
Ala Gln Gly Gln Lys Lys Val Glu Glu Leu Glu Gly Glu Ile Thr Thr
          110                      115                      120

tta aac cat aag ctt cag gac gcg tct gca gag gtg gag cga ctg aga 436
Leu Asn His Lys Leu Gln Asp Ala Ser Ala Glu Val Glu Arg Leu Arg
          125                      130                      135

aga gaa aac cag gtc tta agc gtg aga atc gcg gac aag aag tac tac 484
Arg Glu Asn Gln Val Leu Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr
          140                      145                      150

ccc agc tcc cag gac tcc agc tcc gct gcg gcg ccc cag ctg ctg att 532
Pro Ser Ser Gln Asp Ser Ser Ser Ala Ala Ala Pro Gln Leu Leu Ile
          155                      160                      165                      170

gtg ctg ctg ggc ctc agc gct ctg ctg cag tgagatccca ggaagctggc 582
Val Leu Leu Gly Leu Ser Ala Leu Leu Gln
          175                      180

acatcttggga aggtccgtcc tgctcggcctt ttcgcttgaa cattcccttg atctcatcag 642

ttctgagcgg gtcattggggc aacacgggta gcgggggagag cacggggtag ccggagaagg 702

gcctctggag caggtctgga ggggccatgg ggcagtcctg ggtctgggga cacagtcggg 762

ttgaccagg gctgtctccc tccagagcct ccctccggac aatgagtcct ccctcttgtc 822

tcccaccctg agattgggca tgggggtgcgg tgtggggggc atgtgctgcc tgttggtatg 882

ggtttttttt gcgggggggg ttgctttttt ctgggggtctt tgagctccaa aaaaaataaac 942

acttcctttg agggagagca caccttaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaattc 1002

gggcggccgc c 1013

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<210> 129

<211> 180

<212> PRT

<213> Homo sapiens

<220>

<223> HM1.24 antigenic protein

<400> 129

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Met Ala Ser Thr Ser Tyr Asp Tyr Cys Arg Val Pro Met Glu Asp Gly
  1             5             10             15

Asp Lys Arg Cys Lys Leu Leu Leu Gly Ile Gly Ile Leu Val Leu Leu
  20             25             30

Ile Ile Val Ile Leu Gly Val Pro Leu Ile Ile Phe Thr Ile Lys Ala
  35             40             45

```

Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg
 50 55 60
 Asn Val Thr His Leu Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly
 65 70 75 80
 Phe Gln Asp Val Glu Ala Gln Ala Ala Thr Cys Asn His Thr Val Met
 85 90 95
 Ala Leu Met Ala Ser Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys
 100 105 110
 Val Glu Glu Leu Glu Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln
 115 120 125
 Asp Ala Ser Ala Glu Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu
 130 135 140
 Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser
 145 150 155 160
 Ser Ser Ala Ala Ala Pro Gln Leu Leu Ile Val Leu Leu Gly Leu Ser
 165 170 175
 Ala Leu Leu Gln
 180

<210> 130

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the L chain V region of AHM

<400> 130

Asp Ile Val Met Thr Gln Ser His Lys Phe Met Ser Thr Ser Val Gly
 1 5 10 15
 Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asp Val Asn Thr Ala
 20 25 30
 Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile
 35 40 45
 Tyr Ser Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Ile Thr Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val Gln Ala
 65 70 75 80
 Glu Asp Leu Ala Leu Tyr Tyr Cys Gln Gln His Tyr Ser Thr Pro Phe
 85 90 95

Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 131
 <211> 80
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the L chain V region of HuSG I

<400> 131
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Trp Tyr Gln Gln Lys Pro Gly Lys Ala
 20 25 30
 Pro Lys Leu Leu Ile Tyr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly
 35 40 45
 Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp
 50 55 60
 Phe Ala Thr Tyr Tyr Cys Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 65 70 75 80

<210> 132
 <211> 80
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the L chain V region of REI

<400> 132
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Trp Tyr Gln Gln Lys Pro Gly Lys Ala
 20 25 30
 Pro Lys Leu Leu Ile Tyr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly
 35 40 45
 Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp
 50 55 60
 Ile Ala Thr Tyr Tyr Cys Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 65 70 75 80

<210> 133
 <211> 106
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the L chain V region of RVL_a

<400> 133

Asp	Ile	Val	Met	Thr	Gln	Ser	His	Lys	Phe	Met	Ser	Thr	Ser	Val	Gly
1				5					10					15	
Asp	Arg	Val	Ser	Ile	Thr	Cys	Lys	Ala	Ser	Gln	Asp	Val	Asn	Thr	Ala
		20						25					30		
Val	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Lys	Leu	Leu	Ile
	35					40						45			
Tyr	Ser	Ala	Ser	Asn	Arg	Tyr	Thr	Gly	Val	Pro	Asp	Arg	Ile	Thr	Gly
	50				55						60				
Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Phe	Thr	Ile	Ser	Ser	Val	Gln	Ala
	65				70					75					80
Glu	Asp	Leu	Ala	Leu	Tyr	Tyr	Cys	Gln	Gln	His	Tyr	Ser	Thr	Pro	Phe
				85					90					95	
Thr	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys						
		100						105							

<210> 134
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the L chain V region of RVL_b

<400> 134

Asp	Ile	Val	Met	Thr	Gln	Ser	His	Lys	Phe	Met	Ser	Thr	Ser	Val	Gly
1				5					10					15	
Asp	Arg	Val	Ser	Ile	Thr	Cys	Lys	Ala	Ser	Gln	Asp	Val	Asn	Thr	Ala
		20						25					30		
Val	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Lys	Leu	Leu	Ile
	35					40						45			
Tyr	Ser	Ala	Ser	Asn	Arg	Tyr	Thr	Gly	Val	Pro	Asp	Arg	Ile	Thr	Gly
	50				55						60				
Ser	Gly	Ser	Gly	Thr	Asp	Tyr	Thr	Phe	Thr	Ile	Ser	Ser	Val	Gln	Ala
	65				70					75					80


```
<210> 135
<211> 49
<212> PRT
<213> Artificial Sequence
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<220>
<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region (1) AHM
```

<400> 135
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly

```
<210> 136
<211> 44
<212> PRT
<213> Artificial Sequence
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<220>
<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region (1) HuSGI

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<220>
<221> MOD_RES
<222> (16)
<223> Any, other or unknown amino acid
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<220>
<221> MOD_RES
<222> (19)
<223> Any, other or unknown amino acid

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<220>
<221> MOD_RES
<222> (38)
<223> Any, other or unknown amino acid
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<400> 136
Glu Val Gln Leu Val Gln Ser Gly Ala Asp Val Lys Lys Pro Gly Xaa
1 5 10 15

Ser Val Xaa Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ser Trp Val
 20 25 30

Arg Gln Ala Pro Gly Xaa Gly Leu Asp Trp Val Gly
 35 40

<210> 137
 <211> 44
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) HG3

<400> 137
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Asn Trp Val
 20 25 30

Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly
 35 40

<210> 138
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHa

<400> 138
 Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 139
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHb

<400> 139

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 140

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHc

<400> 140

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 141

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHd

<400> 141

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 142
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHe

<400> 142
 Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 143
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHf

<400> 143
 Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 144
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHg

<400> 144

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 145

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHh

<400> 145

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 146

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHi

<400> 146

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 147
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHj

<400> 147
 Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15
 Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30
 Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45
 Gly

<210> 148
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHk

<400> 148
 Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15
 Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30
 Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45
 Gly

<210> 149
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHl

<400> 149

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 150

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHm

<400> 150

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 151

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHn

<400> 151

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 152
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHo

<400> 152
 Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15
 Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30
 Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 153
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHp

<400> 153
 Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15
 Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30
 Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 154
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHq

<400> 154

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 155

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (1) RVHr

<400> 155

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly

<210> 156

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (2) AHM

<400> 156

Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser Gln Lys Phe Lys
 1 5 10 15

Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr Met
 20 25 30

Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val Tyr Tyr Cys Ala
 35 40 45

Arg

<210> 157
 <211> 32
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (2) HuSGI

<220>
 <221> MOD_RES
 <222> (4)
 <223> Any, other or unknown amino acid

<220>
 <221> MOD_RES
 <222> (6)
 <223> Any, other or unknown amino acid

<220>
 <221> MOD_RES
 <222> (8)
 <223> Any, other or unknown amino acid

<220>
 <221> MOD_RES
 <222> (10)
 <223> Any, other or unknown amino acid

<400> 157
 Arg Val Thr Xaa Thr Xaa Asp Xaa Ser Xaa Asn Thr Ala Tyr Met Glu
 1 5 10 15
 Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 20 25 30

<210> 158
 <211> 32
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (2) HG3

<400> 158
 Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr Met Glu
 1 5 10 15
 Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 20 25 30

<210> 159
 <211> 49
 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region (2) RVHa

<400> 159

Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser Gln Lys Phe Lys
1 5 10 15

Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr Met
20 25 30

Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val Tyr Tyr Cys Ala
35 40 45

Arg

<210> 160

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region (2) RVHb

<400> 160

Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser Gln Lys Phe Lys
1 5 10 15

Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr Met
20 25 30

Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val Tyr Tyr Cys Ala
35 40 45

Arg

<210> 161

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region (2) RVHc

<400> 161

Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser Gln Lys Phe Lys
1 5 10 15

Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr Met
20 25 30

Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val Tyr Tyr Cys Ala
 35 40 45

Arg

<210> 162
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (2) RVHd

<400> 162
 Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser Gln Lys Phe Lys
 1 5 10 15

Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr Met
 20 25 30

Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val Tyr Tyr Cys Ala
 35 40 45

Arg

<210> 163
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (2) RVHe

<400> 163
 Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser Gln Lys Phe Lys
 1 5 10 15

Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr Met
 20 25 30

Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val Tyr Tyr Cys Ala
 35 40 45

Arg

<210> 164
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region (2) RVHf

<400> 164

Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser	Gln	Lys	Phe	Lys
1				5				10						15	

Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Lys	Ser	Ser	Ser	Thr	Ala	Tyr	Met
			20					25					30		

Gln	Leu	Ser	Ile	Leu	Ala	Phe	Glu	Asp	Ser	Ala	Val	Tyr	Tyr	Cys	Ala
		35					40					45			

Arg

<210> 165

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region (2) RVHg

<400> 165

Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser	Gln	Lys	Phe	Lys
1				5				10						15	

Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Lys	Ser	Ser	Ser	Thr	Ala	Tyr	Met
			20					25					30		

Gln	Leu	Ser	Ile	Leu	Ala	Phe	Glu	Asp	Ser	Ala	Val	Tyr	Tyr	Cys	Ala
		35					40					45			

Arg

<210> 166

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region (2) RVHh

<400> 166

Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser	Gln	Lys	Phe	Lys
1				5				10						15	

Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Lys	Ser	Ser	Ser	Thr	Ala	Tyr	Met
			20					25					30		

Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val Tyr Tyr Cys Ala
 35 40 45

Arg

<210> 167

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (2) RVHi

<400> 167

Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser Gln Lys Phe Lys
 1 5 10 15

Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr Met
 20 25 30

Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val Tyr Tyr Cys Ala
 35 40 45

Arg

<210> 168

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (2) RVHj

<400> 168

Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser Gln Lys Phe Lys
 1 5 10 15

Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr Met
 20 25 30

Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val Tyr Tyr Cys Ala
 35 40 45

Arg

<210> 169

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region (2) RVHk

<400> 169

Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser	Gln	Lys	Phe	Lys
1				5				10						15	

Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Lys	Ser	Ser	Ser	Thr	Ala	Tyr	Met
			20					25					30		

Gln	Leu	Ser	Ile	Leu	Ala	Phe	Glu	Asp	Ser	Ala	Val	Tyr	Tyr	Cys	Ala
		35					40					45			

Arg

<210> 170

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region (2) RVHl

<400> 170

Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser	Gln	Lys	Phe	Lys
1				5				10						15	

Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Lys	Ser	Ser	Ser	Thr	Ala	Tyr	Met
			20					25					30		

Gln	Leu	Ser	Ile	Leu	Ala	Phe	Glu	Asp	Ser	Ala	Val	Tyr	Tyr	Cys	Ala
		35					40					45			

Arg

<210> 171

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region (2) RVHm

<400> 171

Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser	Gln	Lys	Phe	Lys
1				5				10						15	

Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Lys	Ser	Ser	Ser	Thr	Ala	Tyr	Met
			20					25					30		

Bf

Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val Tyr Tyr Cys Ala
 35 40 45

Arg

<210> 172
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (2) RVHn

<400> 172
 Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser Gln Lys Phe Lys
 1 5 10 15

Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr Met
 20 25 30

Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val Tyr Tyr Cys Ala
 35 40 45

Arg

<210> 173
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region (2) RVHo

<400> 173
 Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser Gln Lys Phe Lys
 1 5 10 15

Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr Met
 20 25 30

Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val Tyr Tyr Cys Ala
 35 40 45

Arg

<210> 174
 <211> 49
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region (2) RVHp

<400> 174

Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser	Gln	Lys	Phe	Lys
1				5				10						15	

Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Lys	Ser	Ser	Ser	Thr	Ala	Tyr	Met
			20					25					30		

Gln	Leu	Ser	Ile	Leu	Ala	Phe	Glu	Asp	Ser	Ala	Val	Tyr	Tyr	Cys	Ala
		35					40					45			

Arg

<210> 175

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region (2) RVHq

<400> 175

Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser	Gln	Lys	Phe	Lys
1				5				10						15	

Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Lys	Ser	Ser	Ser	Thr	Ala	Tyr	Met
			20					25					30		

Gln	Leu	Ser	Ile	Leu	Ala	Phe	Glu	Asp	Ser	Ala	Val	Tyr	Tyr	Cys	Ala
		35					40					45			

Arg

<210> 176

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region (2) RVHr

<400> 176

Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser	Gln	Lys	Phe	Lys
1				5				10						15	

Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Lys	Ser	Ser	Ser	Thr	Ala	Tyr	Met
			20					25					30		

Gln	Leu	Ser	Ile	Leu	Ala	Phe	Glu	Asp	Ser	Ala	Val	Tyr	Tyr	Cys	Ala
		35					40					45			

Arg

<210> 177

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region AHM

<400> 177

Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr
1				5					10				15		

Thr	Leu	Thr	Val	Ser	Ser
			20		

<210> 178

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region HuSGI

<400> 178

Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser
1				5					10	

<210> 179

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region JH6

<400> 179

Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser
1				5					10	

<210> 180

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region RVHa

Bf

<400> 180

Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr
1				5					10					15	

Thr	Leu	Thr	Val	Ser	Ser
					20

<210> 181

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region RVHb

<400> 181

Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr
1				5					10					15	

Thr	Leu	Thr	Val	Ser	Ser
					20

<210> 182

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region RVHc

<400> 182

Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr
1				5					10					15	

Thr	Leu	Thr	Val	Ser	Ser
					20

<210> 183

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region RVHd

<400> 183

Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr
1				5					10					15	

Thr	Leu	Thr	Val	Ser	Ser
					20

<210> 184
 <211> 22
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region RVHe

<400> 184

Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
 1 5 10 15

Thr Leu Thr Val Ser Ser
 20

<210> 185
 <211> 22
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region RVHf

<400> 185

Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
 1 5 10 15

Thr Leu Thr Val Ser Ser
 20

<210> 186
 <211> 22
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region RVHg

<400> 186

Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
 1 5 10 15

Thr Leu Thr Val Ser Ser
 20

<210> 187
 <211> 22
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region RVHh

<400> 187

Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr
1				5				10						15	

Thr	Leu	Thr	Val	Ser	Ser
			20		

<210> 188

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region RVHi

<400> 188

Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr
1				5				10						15	

Thr	Leu	Thr	Val	Ser	Ser
			20		

<210> 189

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region RVHj

<400> 189

Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr
1				5				10						15	

Thr	Leu	Thr	Val	Ser	Ser
			20		

<210> 190

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region RVHk

<400> 190

Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr
1				5				10						15	

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Thr Leu Thr Val Ser Ser
20

<210> 191
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region RVHl

<400> 191
Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
1 5 10 15

Thr Leu Thr Val Ser Ser
20

<210> 192
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region RVHm

<400> 192
Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
1 5 10 15

Thr Leu Thr Val Ser Ser
20

<210> 193
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Amino acid
sequence of the H chain V region RVHn

<400> 193
Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
1 5 10 15

Thr Leu Thr Val Ser Ser
20

<210> 194
<211> 22

<212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region RVHo

<400> 194

Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
 1 5 10 15

Thr Leu Thr Val Ser Ser
 20

<210> 195

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region RVHp

<400> 195

Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
 1 5 10 15

Thr Leu Thr Val Ser Ser
 20

<210> 196

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region RVHq

<400> 196

Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
 1 5 10 15

Thr Leu Thr Val Ser Ser
 20

<210> 197

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Amino acid
 sequence of the H chain V region RVHr

58

<400> 197

Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
 1 5 10 15

Thr Leu Thr Val Ser Ser
 20

<210> 198

<211> 120

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Design of V
 region of Natural Humanized Antibody (HM1.24)

<400> 198

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Pro Tyr
 20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser Gln Lys Phe
 50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
 65 70 75 80

Met Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln
 100 105 110

Gly Thr Thr Leu Thr Val Ser Ser
 115 120

<210> 199

<211> 87

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Design of V
 region of Natural Humanized Antibody (HuSGI)

<220>

<221> MOD_RES

<222> (16)

<223> Any, other or unknown amino acid

<220>

<221> MOD_RES

<222> (19)

<223> Any, other or unknown amino acid

<220>

<221> MOD_RES

<222> (38)

<223> Any, other or unknown amino acid

<400> 199

Glu Val Gln Leu Val Gln Ser Gly Ala Asp Val Lys Lys Pro Gly Xaa
1 5 10 15

Ser Val Xaa Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ser Trp Val
20 25 30

Arg Gln Ala Pro Gly Xaa Gly Leu Asp Trp Val Gly Arg Val Thr Xaa
35 40 45

Thr Xaa Asp Xaa Ser Xaa Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu
50 55 60

Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Trp Gly Gln Gly
65 70 75 80

Thr Leu Val Thr Val Ser Ser
85

<210> 200

<211> 87

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Design of V
region of Natural Humanized Antibody (HG3)

<400> 200

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Asn Trp Val
20 25 30

Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Arg Val Thr Met
35 40 45

Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr Met Glu Leu Ser Ser Leu
50 55 60

Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Trp Gly Gln Gly
65 70 75 80

Thr Thr Val Thr Val Ser Ser
85

<210> 201
 <211> 120
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Design of V
 region of Natural Humanized Antibody (RVHr)

<400> 201

Gln	Val	Gln	Leu	Gln	Gln	Ser	Gly	Ala	Glu	Leu	Ala	Arg	Pro	Gly	Ala
1				5					10					15	
Ser	Val	Lys	Leu	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe	Thr	Pro	Tyr
			20					25					30		
Trp	Met	Gln	Trp	Val	Lys	Gln	Arg	Pro	Gly	Gln	Gly	Leu	Glu	Trp	Ile
		35					40					45			
Gly	Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser	Gln	Lys	Phe
		50				55					60				
Lys	Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Lys	Ser	Ser	Ser	Thr	Ala	Tyr
	65				70					75					80
Met	Gln	Leu	Ser	Ile	Leu	Ala	Phe	Glu	Asp	Ser	Ala	Val	Tyr	Tyr	Cys
				85						90				95	
Ala	Arg	Gly	Leu	Arg	Arg	Gly	Gly	Tyr	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln
			100					105					110		
Gly	Thr	Thr	Leu	Thr	Val	Ser	Ser								
			115				120								

<210> 202
 <211> 120
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Design of V
 region of Natural Humanized Antibody (2ndRVH)

<400> 202

Gln	Val	Gln	Leu	Gln	Gln	Ser	Gly	Ala	Glu	Leu	Ala	Arg	Pro	Gly	Ala
1				5					10					15	
Ser	Val	Lys	Leu	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe	Thr	Pro	Tyr
			20					25					30		
Trp	Met	Gln	Trp	Val	Lys	Gln	Arg	Pro	Gly	Gln	Gly	Leu	Glu	Trp	Ile
		35					40					45			
Gly	Ser	Ile	Phe	Pro	Gly	Asp	Gly	Asp	Thr	Arg	Tyr	Ser	Gln	Lys	Phe
		50				55					60				

Lys Gly Lys Ala Thr Ile Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
 65 70 75 80

Met Gln Leu Ser Ile Leu Ala Phe Glu Asp Ser Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln
 100 105 110

Gly Thr Thr Leu Thr Val Ser Ser
 115 120

<210> 203

<211> 94

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primary design
 antibody

<400> 203

Arg Tyr Thr Met Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr Met Glu
 1 5 10 15

Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 20 25 30

Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Arg Ile Ile
 35 40 45

Pro Ile Leu Gly Ile Ala Asn Tyr Ala Gln Lys Phe Gln Gly Arg Val
 50 55 60

Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr Met Glu Leu Ser
 65 70 75 80

Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 85 90

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